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**THE COMMISSIONER OF PATENTS AND TRADEMARKS:**

Applicant, Mary J. Cox, a citizen of the United States of America and resident of Las Vegas,  
County of Clark, State of Nevada, prays that Letters Patent be granted to her for the new and useful

**WIG HAVING STRETCHABLE FOUNDATION COVERED BY HAIR WEFTS**

set forth in the following specification:

# PATENT

## Related Application

This application claims priority of my copending U.S. Provisional Patent Application No. 60/411,514 filed September 18, 2002, the entire disclosure of which is herein incorporated by  
5 reference thereto.

## SPECIFICATION

### Background of the Invention

Field: This invention relates generally to hairpieces and wigs, and more particularly to  
10 hairpieces and wigs having a mesh foundation covered by a plurality of hairs.

State of the Art: Wigs and hairpieces have been worn by men and women for years to enhance the looks of the wearer. Wigs and hairpieces are designed, respectively, for totally and partially covering the scalp and hair on the head of the wearer. Hair extensions are designed to enhance the style of the wearer's existing hair.

15 Wigs are of full size to cover the entire scalp and existing hair of the wearer. Wigs are most commonly worn by women for various reasons including: 1) to cover thinning or balding areas of the wearer's scalp; 2) to permit the wearer to look good despite insufficient time to have a hair styling done; and 3) to permit the wearer to have a variety of hair styles and lengths without changing the style and length of their real hair. Wigs are made from a plurality of hairs which are affixed to  
20 an outer surface of an artificial scalp. The artificial scalp may be in the form of a foundation, cap, or wig base (hereinafter all referred to as foundation) which is rigid, semi-rigid, or readily deformable. The foundation is shaped to fit onto the wearer's head and is used to hold the wig in

place on the wearer's head. The hairs may be natural hair, artificial hair, or a mix thereof. Artificial hair typically comprises synthetic fibers of polyester, rayon, polyvinyl chloride, polyethylene, polypropylene, polyurethane, or cotton. Such synthetic fibers have advantages over natural hair which include lower cost than natural hair, ease of manufacturing the wig, ease of obtaining a desired hair color by coloring the synthetic hair, and ease in caring for the wig such as shampooing.

Wigs obviously should appear as close to naturally growing hair on the wearer's head as possible. The hairline region of the wig is particularly difficult to present as natural looking hair, specifically at the forehead region of the wearer's head. Some wigs attempt to conceal or camouflage the hairline region but only if the wig is worn with the hairs thereof in a particular arrangement. If the hair arrangement is inadvertently changed such as during wind gusts, brushing, and the like, the foundation is exposed revealing the presence of the wig.

There are several common wig constructions. A first common wig construction has a foundation which is molded to fit the wearer's head made from a soft, flexible synthetic resinous material such as polyurethane. The foundation forms an artificial skin into which a plurality of strands of hairs are implanted and adhesively secured using a hair-planting needle. The foundation may have a plurality of pairs of bores are formed therein to facilitate hair implantation. The hairs are then passed through the pair of bores and tied to the pair of bores forming a plurality of knots. Short lengths of thin string may be used to tie the hairs to the foundation. Alternatively, the hairs may be secured to the foundation using V-planting or other commonly known methods of implanting the hairs without tying. After insertion of the hairs such as using V-planting, an inner surface of the foundation is coated with a hardening resin to fix the hairs in the desired positions extending from the outer surface of the foundation. This artificial skin type of foundation must be formed as thin

as possible if the most comfortable fit is to be obtained including lighter weight and lower heat/moisture retention. Even so, wigs of this construction still tend to build up excessive heat and moisture on the wearer's scalp when worn for long periods of time. This is because the resinous material is impervious to air and thus breathing of the wig on the wearer's scalp is drastically  
5 impeded. Even when wigs of this construction are perforated in an attempt to increase the flow of air to the scalp, the resulting increase in breathability is still inadequate.

A second, more common wig construction has a foundation made of a piece of fabric and strips of lace which fits onto the head of the wearer having an outer surface to which the hairs are attached. The lace strips are of a non-stretch type, though limited areas of the foundation such as  
10 short portions of a peripheral edge of the foundation may have lace strips of a stretch type. Elastic bands may extend along only a short portion thereof such as at the sides whereby the foundation may be slightly stretched to facilitate placing the wig on the wearer's head. The elastic is designed to draw only the peripheral edge of the wig about the wearer's head to retain the wig in position thereon. Likewise, some foundations have adjustment devices such as non-elastic straps with snaps  
15 or mating hook and loop fastener patches such as commonly known under the trade name VELCRO™ which allow adjustment of the peripheral edge to fit the wearer's head.

The hairs may be manually affixed directly to the fabric and lace strips of the foundation tied by hand. Alternatively, the hairs may be in the form of pre-made linear strips or hair wefts which are manually or machine sewn to the foundation. In the former hand-tied method of attaching the  
20 hairs, the individual hairs are manually affixed directly to the foundation by hand-tying individual hairs or small groups thereof to the foundation. This can be accomplished using a hair-planting needle through the fabric and/or lace, or by inserting the hairs through existing perforations

therethrough. The foundation obviously must be made of fabric which must be relatively strong since the hairs are attached directly to the fabric. This hand-tying method can give the resulting wig the advantage of having a natural look if sewn by a skilled worker. However, it is difficult and expensive to mass produce hand-tied wigs due to the large number of labor hours and the high skill level required of the workers in tying the hairs to the foundation by hand.

In the latter hand or machine sewn method using hair wefts, the pre-made hair wefts are pluralities of the hairs which are cut to a predetermined length and positioned side-by-side. The positioned hairs are machine sewn together at a first transverse seam comprising spaced double stitches midway along the lengths of the hairs to form a plurality of small hair bundles retained by the stitches. One side of the now stitched hairs is doubled over onto the other side thereof along a transverse centerline between the double stitches of the first transverse seam. The doubled over hairs are sewn together at a second transverse seam comprising a single stitch line adjacent the transverse centerline to form linear strips or hair wefts ready to be sewn to the foundation. An attachment area of the hair wefts at the transverse seams may be coated with a urethane adhesive to further secure together the individual hairs. A finished wig is produced by placing the foundation onto a head-shaped sheet or form to maintain the shape of the foundation in a configuration as worn on the head of the wearer. The hair wefts are then arranged as desired on the foundation in a spaced apart manner to cover the foundation and cut to length to fit the foundation. The attachment areas of the individual hair wefts are tack-sewn at a plurality of points. The foundation with tack-sewn hair wefts is removed from the head form. The hair wefts are then hand or machine sewn to the foundation extending therealong at respective non-stretchable, single stitch seams disposed along the attachment

areas. While such wigs sewn by hand or by machine can be more readily mass-produced, the quality of the wigs may not be equal to that of wigs which are hand-tied by a skilled worker.

Examples of the second common wig construction are disclosed in U.S. Patent Nos. 6,352,079 and 6,220,249 issued respectively to Bate and Park. Bate discloses a wig having a foundation fabricated from thin nylon lace to which a plurality of hair wefts are attached. The foundation includes a crown fabricated from a thin non-stretch nylon lace and a non-stretch net material. A top area is fabricated from a thin non-stretch nylon lace. A back and a plurality of sides are fabricated from a thin stretch nylon lace. A front is fabricated from nylon and has a velvet-like front which closely follows the contour of the wearer's head. A plurality of hair wefts are attached to the foundation. Park discloses a wig having a plurality of length adjusting parts disposed at a back portion of the foundation. The length adjusting parts allow adjusting of the length of the peripheral edge to fit the wearer's head. However, since both of these foundations are mostly non-elastic except for limited portions of the sides and/or the peripheral edge, they do not fit well to the wearer's head. The wig of Bate has limited stretchability and the wig of Park is adjustable only in one plane around the peripheral edge of the wig. While this might provide a good fit at the peripheral edge, a remaining upper portion of the wig remains loose and bulky.

A third common construction for wigs has a foundation which is molded from a non-elastic, semi-rigid net or network structure having a plurality of fine meshes. The network structure is usually comprised of a plurality of non-elastic nylon or polyester filaments of a circular cross-section. The network structure is semi-permanently molded to fit the wearer's head using heat and a mold representative of the wearer's head. A plurality of individual hairs or small groups thereof are individually hand-tied to the foundation extending outwardly from the foundation. While

this construction may be lighter in weight and allow more air flow so as to be cooler, it suffers from the other problems mentioned above including lack of adjustability consequent inadequate fit, requires skilled labor to manufacture to provide a natural look, and has higher a manufacturing cost due to the hand-made construction thereof.

5           One problem with the aforementioned wig constructions, particularly the last construction, is that when the hairs are hand-tied to the foundation they often must be double tied to prevent angular movement. The knots form relatively large balls of hair and string (if used) at the inner surface of the foundation which can be uncomfortable when the wig is placed against the wearer's head. Additionally, the knots may be visible to observers through gaps between the hairs.

10           Hairpieces were developed to help persons having areas of the scalp with thinning or no hair. Hairpieces do not cover the entire head of the wearer and are designed to leave areas of the scalp which have adequate existing hair exposed. Early hairpieces were partial wigs having relatively thick foundations covered with attached hairs which were often insufficiently concealed by the wearer's existing hair. This resulted in the fact of wearing the hairpiece being unwittingly disclosed  
15 to observers. Additionally, these foundations were impervious to air and thus caused heat and moisture to build-up on the scalp of the wearer with the associated wearing discomfort. As hairpieces evolved, thinner foundations were developed which, while being an improvement over previous hairpieces, still had an unnatural looking hairline at the wearer's forehead. Lace front hairpieces were then designed to provide a more natural front hairline for wearers having a rigid  
20 foundation with modified front pieces made from a woven mesh onto which hairs are attached. While the lace front hairpieces did improve the look of the front hairline, they were still uncomfortable to wear due to the heat and moisture build-up. Finally, hairpieces were designed

having foundations made totally from a non-elastic mesh material. The mesh foundations were cooler to wear and helped to dissipate moisture but lacked sufficient structural integrity to be removed and re-applied on the daily basis desired by most wearers.

Wigs and hairpieces are sometimes retained to strands of the existing hair on the scalp of the wearer by a plurality of anchoring members such as wig pins are mounted to a bottom surface of the foundation. The strands of existing hair are clamped between the pins to retain the wig in position on the wearer's head. The wig pins, however, cause the foundation to be raised on the wearer's head causing an unnatural look for the wig. Additionally, the existing hair which is clamped between the wig pins may be damaged during use of the wig. Alternatively, wigs are sometimes retained to the wearer's scalp using a liquid adhesive, double-sided adhesive tape, or other adhesive device. This is often used to prevent lifting of the outer edge of the foundation while the wig is being worn and the resultant unnatural looking hairline. There are, however, drawbacks to using adhesive devices to retain wigs to the wearer's scalp. Firstly, attaching and detaching of the wig is difficult and must be done carefully to prevent excessive pulling of the existing hair and scalp. The use of adhesives is also somewhat uncomfortable for the wearer. Finally, double-sided adhesive tape loses adhesive strength after several attachments and detachments of the wig and must be replaced frequently.

An ideal wig or hairpiece would have a foundation with a high degree of elasticity in all three dimensions to closely conform to the size, shape, and existing hair of the wearer's head closely overlying the existing hair so as to be discreet and natural. That is, the wig would not be overly bulky so as to draw undesired attention to and be identified as a wig. The wig would fit securely to the wearer's head for use in athletic activities yet be comfortable to wear. The foundation would be light in weight so as to be comfortable to wear yet provide the necessary strength and support to hold



the hairs in the desired positions. The foundation would be thin and have perforations to allow sufficient airflow or breathability to minimize heat and moisture build-up on the wearer's scalp. The wig would be able to utilize artificial hair as well as natural hair to minimize the manufactured cost if so desired. The wig would be uncomplicated and suitable for mass production using semi-  
5 automatic machinery such as sewing machines. The wig would be adaptable for many different hair styles and hair lengths and may be cut and styled as desired. The wig could be made using hairs of different textures to provide for diversity of race and ethnicity such as using natural perm straight hair, silky straight hair, body wavy hair, kinky straight hair, Indian hair, and curly or straight french refined hair. The wig would require minimal maintenance yet looks good on the wearer's head and  
10 produces a more natural hairline which is less subject to be disturbed or rearranged. The wig would be manufacturable of a full size so as to completely cover the wearer's existing hair or of a partial size so as to cover a bald or thinning portion of the wearer's scalp with hairs that blend naturally and inconspicuously into the wearer's existing hair. The wig would easily be restylable or refurbishable by the manufacturer by removing and replacing some or all of the hair with that having different  
15 texture, color, highlights, length, and the like.

Therefore, there is a continuing need for a hairpiece and a wig which: 1) has a foundation with a high degree of elasticity in all three dimensions to closely conform to the contours of the wearer's hair and head to accommodate a wide range of head sizes, shapes, and underlying hair lengths; 2) has a natural appearance on the wearer's head by having natural looking hair fibers,  
20 layering, and growth directions, and not being bulky on the wearer's head; 3) positively secures to the wearer's head without using tape, adhesives or pins during use both indoors and outdoors such as during sports yet is easy to remove when desired; 4) is comfortable to wear by being light in

weight with no pressure points such as knots and breathable so as to be cool to wear by facilitating air flow with the wearer's scalp; 5) has sufficient strength to retain the hair in place; 6) has a foundation which is thin and has perforations to allow sufficient airflow or breathability to minimize heat and moisture build-up on the wearer's scalp; 7) is able to utilize artificial hair as well as natural hair if so desired; 8) is uncomplicated and suitable for mass production using semi-automatic machinery such as sewing machines; 9) is adaptable for many different hair styles and hair lengths and may be cut and styled as desired; 10) requires minimal maintenance yet looks good on the wearer's head; 11) produces a more natural hairline which is less subject to be disturbed or rearranged; and 12) is manufacturable of a full size so as to completely cover the wearer's existing hair or of a partial size so as to cover a bald or thinning portion of the wearer's scalp with hairs that blend naturally and inconspicuously into the wearer's existing hair.

### Summary of the Invention

The present invention is a hairpiece or wig for covering hair on a wearer's head. The wig includes a foundation made of a stretchable netting formed into a generally bowl-shaped configuration. The foundation has a convex outer surface and a stretchable peripheral edge. The foundation is sized to closely fit over the hair retained on the wearer's head. A plurality of elongate hairs are attached to the foundation extending from the convex outer surface thereof. The wig may be of full size such that the hairs completely cover a normal fully hair covered portion of the wearer's head. Likewise, the wig may be of partial size such that the hairs cover a thinning hair portion of a normal fully hair covered portion of the wearer's head adjacent a remaining hair covered portion thereof.

The hairs are typically in the form of a plurality of hair wefts which are cut to length from longer raw lengths of hair wefts. The hair wefts are attached to the foundation in a spaced relationship, typically at least initially extending substantially tangential to the outer surface thereof, at respective expandable sewn weft seams. At least some of the hair wefts may be of a “weaved” type as explained subsequently. The sewn weft seams are typically of a zig-zag type which allow the foundation to substantially freely stretch and contract beneath the hair wefts. The hair wefts are arranged in a layered configuration to hide respective attachment areas thereof to the foundation from view and to blend together the hairs of adjacent hair wefts to provide a natural look.

The hairs are typically arranged on the foundation to simulate natural hair growth patterns. Some of the hair wefts may be disposed generally transversely of the foundation starting at a front of the foundation extending from a left side to a right side thereof. Adjacent hair wefts are attached toward a rear portion of the foundation. Respective ends of a majority of the hairs of the hair wefts point generally forwardly, downwardly, upwardly, or a combination thereof to simulate the natural hair growth pattern at respective front and sides on the wearer’s head. Some of the hair wefts may be disposed in a configuration generally centered about a crown of the foundation. Respective ends of the hairs point generally radially outwardly from the crown to simulate the natural hair growth pattern at a crown of the wearer’s head.

In a first preferred embodiment of the wig, the foundation is made from generally circular blank of the stretchable netting having an outer periphery to which an elastic band is attached. The elastic band is formed into a looped configuration which extends substantially entirely around the outer periphery thereof to form the generally bowl-shaped configuration for the foundation. The circular blank is radially folded over upon itself at a plurality of pairs of fold lines and retained at

respective section seams to form a plurality of the triangular sections of triple thickness. The triangular sections are radially spaced about the foundation. The hairs are arranged on the foundation to simulate natural hair growth patterns.

In a second preferred embodiment of the wig, the hairs are arranged on the foundation to simulate natural hair growth patterns. The hairs are in the form of a plurality of hair wefts attached to the foundation in a spaced relationship, typically at least initially extending substantially tangential to the outer surface thereof. The hair wefts are arranged in a layered configuration to hide respective attachment areas thereof to the foundation from view and to blend together the hairs of adjacent hair wefts to provide a natural look.

### The Drawings

The best mode presently contemplated for carrying out the invention is illustrated in the accompanying drawings, in which:

FIG. 1 is a side elevational view of a first embodiment wig in accordance with the present invention as worn on the head of a woman;

FIG. 2, a perspective view of the first embodiment wig shown turned inside-out as seen generally from the front and side of the wig;

FIG. 3, a perspective view of the first embodiment wig shown turned inside-out as seen generally from the rear and side of the wig;

FIG. 4, a top plan view of a first circular blank of stretchable mesh netting used to make a first stretchable foundation of the wig;

FIG. 5, a rear elevational view of the first stretchable foundation;

FIG. 6, a top plan view of the first stretchable foundation taken on the line 6-6 of FIG. 5;

FIG. 7, a fragmentary top plan view of a “weaved” hair weft used to make the wigs of the present invention;

FIG. 8, a top plan view of the first stretchable foundation with a first hair weft sewn to a front  
5 portion thereof;

FIG. 9, a longitudinal vertical sectional view of the first stretchable foundation taken on the line 9-9 of FIG. 8 but with additional hair wefts attached thereto;

FIG. 10, a top plan view of a second circular blank of stretchable mesh netting used to make a second stretchable foundation of a second embodiment wig in accordance with the present  
10 invention;

FIG. 11, a rear elevational view of the second stretchable foundation;

FIG. 12, a bottom plan view of the second stretchable foundation taken on the line 12-12 of FIG. 11;

FIG. 13, a perspective view of the second embodiment wig shown turned inside-out as seen  
15 generally from the rear and side of the wig;

FIG. 14, a side elevational view of a third embodiment wig in accordance with the present invention comprising a partial wig or toupe as worn on the head of a man;

FIG. 15, a perspective view of the third embodiment wig shown turned inside-out as seen generally from the rear and side of the wig; and

FIG. 16, a perspective view of a fourth embodiment in accordance with the present invention  
20 shown turned inside-out as seen generally from the front and side of the wig.

### Detailed Description of the Illustrated Embodiments

Referring to FIG. 1, therein is shown a first embodiment hairpiece or wig in accordance with the present invention, designated generally at 20, shown covering the hair 22 of a woman 24 on her head 26.

5 As best shown in FIGS. 2 and 3, the wig 20 includes a stretchable foundation 27 to which a plurality of elongate hairs 28 are attached extending from a convex outer surface 29 thereof. The hairs 28 may be natural hairs, artificial hairs such as synthetic hairs of nylon, polyester or the like, or a mixture thereof. The hairs 28 are typically pre-dyed in one or more desired hair colors prior to attachment to the foundation 27. The hairs 28 are preferably in the form of a plurality of hair wefts  
10 30a-l attached to the foundation 27 in an overlapping, spaced relationship. The wig 20 shown is of full size such that the hairs 28 completely cover a normal fully hair covered portion 31 of the wearer's head 26.

Referring to FIGS. 4-6, the foundation 27 is made of a stretchable netting formed into a generally bowl-shaped configuration having the convex outer surface 29 as worn on the wearer's  
15 head 26. The foundation 27 is sized to closely fit over the hair 22 retained on the wearer's head 26. The foundation 27 is made from a circular blank 32 of a stretchable netting in the form of a perforate sheet material which elastically stretches in both planar directions and combinations thereof, and which is freely flexible in a direction perpendicular thereto. A preferred stretchable netting material is nylon spandex netting, which is widely commercially available, comprised of nylon strands which  
20 are wrapped around stretchable strands of spandex. Other suitable netting materials include latex rubber or other rubber compounds and the like. A peripheral edge 33 of the blank 32 is stretchable and foldable like the remainder of blank 32. The stretchable netting has a multiplicity of rectangular

openings, shown as square openings 34, defined by respective fiber groups 35 and 36 of evenly spaced, parallel elastic fibers 37 and 38 which intersect at a right angle. The elastic fibers 37 and 38 of the fiber groups 35 and 36 are evenly spaced typically at between about eight and fourteen strands per inch. The circular blank 32 is radially folded over upon itself at a plurality of pairs of fold lines 39 and 40 to form a plurality of pleats or generally triangular sections 41 of triple thickness which are substantially equally-radially spaced about the foundation 27. The triangular sections 41 help to form the generally bowl-shaped configuration of foundation 27. The circular blank 32 has an outer periphery 42 to which an elastic band 43 is attached to further form and retain the generally bowl-shaped configuration for the foundation 27.

The elastic band 43 is made of any suitable stretchable material, preferably of conventional construction used in industry, being made of a non-stretchable cloth strip with a plurality of elastic strands (not shown) which extend longitudinally therethrough. The elastic strands form the cloth strip slightly into a longitudinally accorded configuration to allow stretching of the elastic band 43. The elastic band 43 is formed into a looped configuration which extends completely around the outer periphery 42 of the circular blank 32 with opposite ends 44 and 45 thereof overlapping. The elastic band 43 is attached to the outer periphery 42 of the circular blank 32 at a plurality of individual places (not shown) or an expandable peripheral seam 48. The peripheral seam 48 shown comprises a stretchable sewn zig-zag seam which allows the circular blank 32 to freely stretch and contract. The triangular sections 41 are retained at respective section seams 49 comprising adjacent portions of the peripheral seam 48.

As best shown in FIG 7, the hair wefts 30a-l are of a single weft type which are cut to length from longer raw lengths of hair wefts 50. Hair wefts 50 each comprise a plurality of hair bundles 51 each including a plurality of the hairs 28 which are doubled-over offset from the center thereof. Respective folded areas 58 of the hairs 28 in each hair bundle 51 are sewn together at a double transverse seam 60 comprised of parallel threads "T1" and "T2". The hair bundles 51 are aligned configuration comprising attachment areas 61 of the hair wefts 30a-l such that opposite long and short ends 54 and 56 thereof are juxtaposed only at and closely adjacent the transverse seam 60. This provides a single weft type hair weft 50 to minimize use of hair, minimize weight of the wig 20, and provide better cooling for the wearer's head 26. The hair wefts 30a-l are each of one or more desired hair colors dyed in conventional manner. Single or double hair wefts may be used with single being preferred to provide the lightest weight, most breathable wig 20 possible.

In accordance with one aspect of the present invention, the hair wefts 50 may be "weaved" as shown in FIGS. 7 and 9 wherein some of the long and short ends, designated 54w and 56w, of hairs 28 are pulled free from half of transverse seam 60. This is done by inserting a needle or pin "P" at the folded areas 58 to pull the long and short ends 54w and 56 free of half of transverse seam 60. T-pins, safety pins, and the like may also be used. The long and short ends 54w and 56w are then initially disposed at an angle "A" relative to the ends 54 and 56 of roughly between about thirty degrees and one-hundred-twenty degrees due to the initial bending of the hairs 28 at the folded areas 58. The "weaved" wefts are subsequently attached to the foundation 27 in the position of FIG. 7 with the long and short hairs 54w and 56w extending away from foundation 27. This covers the folded areas 58, transverse seam 60, and attachment areas 61 (along with the seam used to attach the hair wefts 50 to the foundation 27) to camouflage them. This "weaving" is preferably done for hair



wefts 50 used at the front of the foundation 27 where parting of the hairs 28 might be done, depending on the desired hair style, which could expose “unweaved” hair wefts 50. Likewise, “weaving” is preferably done for hair wefts 50 used at the crown of the foundation 27 where the hairs 28 radiate outwardly therefrom which could expose “unweaved” hair wefts 50 (attachment of hair wefts 50 to foundation 27 explained subsequently). The “weaving” allows styling of the hairs 28 in any desired direction. The hair wefts 50 may also be attached to the foundation 27 at other than tangent thereto to camouflage the folded areas 58, transverse seam 60, attachment areas 61, and the seam used to attach the hair wefts 50 to the foundation 27.

Referring to FIGS. 2, 3, 8, and 9, respective hair wefts 30a-l are cut to length from the raw lengths of hair wefts 50 and the hairs 28 are arranged on the foundation 27 to simulate natural hair growth patterns as follows.

The hair wefts 30a-h are disposed generally transversely of the foundation 27 starting with hair weft 30a at a front portion 62 of foundation 27, extending from a left side 64 to a right side 66 thereof. Hair wefts 30b-h are progressively attached away from hair weft 30a toward a rear portion 68 of the foundation 27. Attachment areas 61 are affixed to the outer surface 29 of foundation 27 lying flat thereagainst at respective weft seams 70a-h, preferably expandable sewn zig-zag seams of nylon or similar thread which allow the foundation 27 to freely stretch and contract beneath the hair wefts 30a-h. Respective ends 54 and 56 of a majority of the hairs 28 of the hair wefts 30a-h typically point generally in a forwardly direction, a downwardly direction, an upwardly direction, or a combination thereof to simulate the natural hair growth pattern at a front portion 71 and respective left and right side portions 72 and 73 of the wearer’s head 26. The ends 54 and 56 of the hairs 28 of adjacent hair wefts 30a-h overlie the attachment areas 61, folded middles 58, and the seams 60

and 70a-h of hair wefts 30a-h hiding them from view. This layered configuration provides a natural look for the hairs 28 and blends together variously colored hairs 28 of the hair wefts 30a-h.

The hair wefts 30i-l are disposed in a rounded triangular configuration generally centered about a crown 74 of foundation 27, starting with hair weft 30l. Hair wefts 30i-k are progressively  
5 attached away from hair weft 30l radially outwardly from crown 74. Attachment areas 61 are affixed to the outer surface 29 of foundation 27 lying flat thereagainst at respective weft seams 70i-l, preferably expandable sewn zig-zag seams of nylon or similar thread which allow the foundation 27 to freely stretch and contract beneath the hair wefts 30i-l. Respective ends 54 and 56 of a majority of the hairs 28 of the hair wefts 30i-l typically point generally radially outwardly from crown 74 to  
10 simulate the natural hair growth pattern at a crown 75 of the wearer's head 26. The ends 54 and 56 of the hairs 28 of adjacent hair wefts 30i-l overlie the attachment areas 61, folded middles 58, and the seams 60 and 70i-l of hair wefts 30i-l hiding them from view. This layered configuration provides a natural look for the hairs 28 and blends together variously colored hairs 28 of the hair wefts 30i-l.

15 The wig 20, and those which follow, use less hairs 28 so as to breath more than conventional wigs and not cause the wearer's head 26 to perspire excessively due to built-up heat thereunder. The elastic band 43 expands according to individual size of the wearer's head 26 making it easier to fit thereonto and providing a natural, non-bulky look. This eliminates the use of adjustable straps utilizing VELCRO™ brand hook and loop fastener patches, hooks, snaps, buttons, clips or other  
20 attachment elements which are difficult to adjust, provide very limited adjustability, and are bulky. The elastic band 43 retains the wig 20 in place on the wearer's head 26 even during vigorous sporting activities and in windy conditions. The elastic band 43 also allows the hairs 28 to lie closely

to the wearer's head 26 providing a naturally looking hairline. Additionally, the wig 20 is easily removed from the wearer's head 26 by gripping the peripheral edge 33 of blank 32 in-hand and picking up the wig 20 off the wearer's head 26. Thus, placing the wig 20 on and removing the wig 20 from the wearer's head 26 is extremely easy.

5 Referring to FIGS. 10-13, therein is shown a second embodiment hairpiece or wig 76 in accordance with the present invention, shown covering the hair 22 of the woman 24 on her head 26.

As best shown in FIG. 13, the wig 76 includes a stretchable foundation 78 to which a plurality of the hairs 28 are attached extending from a convex outer surface 79 thereof. The hairs 28 are in the form of a plurality of hair wefts 80a-l attached to the foundation 78 in an overlapping,  
10 spaced relationship. The wig 76 shown is of full size such that the hairs 28 completely cover the normal fully hair covered portion 31 of the wearer's head 26.

Referring to FIGS. 10-12, the foundation 78 is made of the stretchable netting formed into a generally bowl-shaped configuration with the convex outer surface 79 as worn on the wearer's head 26. The foundation 78 is sized to closely fit over the hair 22 retained on the wearer's head 26.

15 The foundation 78 is made from a circular blank 81 of the stretchable netting in the form of the perforate sheet material which elastically stretches in both planar directions and combinations thereof, and which is freely flexible in a direction perpendicular thereto. A peripheral edge 82 of the blank 81 is stretchable and foldable like the remainder of blank 81. The circular blank 81 is radially folded over upon itself at respective fold lines 84 and 86 to form a pleat or generally triangular  
20 section 88 of triple thickness. The triangular section 88 helps to form the generally bowl-shaped configuration of foundation 78. The circular blank 81 has an outer periphery 89 to which an elastic band 90 of the type described above is attached to further form and retain the generally bowl-shaped

configuration for the foundation 78. The outer periphery 89 has a plurality of drawstring holes 91 and 92 therethrough and the elastic band 90 has a plurality of drawstring holes 94 and 95 therethrough which correspond with drawstring holes 91 and 92.

The elastic band 90 is formed into a looped configuration which extends completely around the outer periphery 89 of the circular blank 81 with opposite ends 96 and 97 thereof overlapping. The elastic band 90 is attached to the outer periphery 89 of the circular blank 81 at a plurality of individual places (not shown) or an expandable peripheral seam 100. The peripheral seam 100 shown comprises a stretchable sewn zig-zag seam which allows the circular blank 81 to freely stretch and contract. The triangular section 88 is retained at a section seam 101 comprising an adjacent portion of the peripheral seam 100.

The foundation 78 includes a pair of drawstrings 102 which include respective first ends 103 attached to the blank 81 and the elastic band 90 of foundation 78 in a laterally spaced relationship at respective drawstring seams 104, preferably sewn seams. The drawstrings 102 are threaded through respective pairs of the drawstring holes 91 and 94, and 92 and 95 to meet centrally therebetween. Respective second ends 105 of the drawstrings 102 may be pulled and tied together to pull the foundation 78 tighter about the wearer's head 26. The second ends 105 are knotted at respective knots 106 to prevent the drawstrings 102 from feeding back through the pairs of drawstring holes 91 and 94, and 92 and 95.

The hair wefts 80a-l are of conventional design such as described above, being cut to length from raw lengths of the hair wefts 50 with the hairs 28 arranged on the foundation 78 to simulate natural hair growth patterns as follows.

As best shown in FIG. 13, the hair wefts 80a-g are disposed generally transversely of the foundation 78 starting with hair weft 80a at a front portion 108 of foundation 78, extending from a left side 110 to a right side 112 thereof. Hair wefts 80b-g are progressively attached away from hair weft 80a toward a rear portion 114 of the foundation 78. Attachment areas 61 are affixed to the outer surface 79 of foundation 78 lying flat thereagainst at respective weft seams 116a-g, preferably expandable sewn zig-zag seams of nylon or similar thread which allow the foundation 78 to freely stretch and contract beneath the hair wefts 80a-g. Respective ends 54 and 56 of a majority of the hairs 28 of the hair wefts 30a-g typically point generally in a forwardly direction, a downwardly direction, an upwardly direction, or a combination thereof to simulate the natural hair growth pattern at the front portion 71 and the respective left and right side portions 72 and 73 of the wearer's head 26. The ends 54 and 56 of the hairs 28 of adjacent hair wefts 80a-g overlie the attachment areas 61, folded middles 58, and the seams 60 and 80a-g of hair wefts 80a-g hiding them from view. This layered configuration provides a natural look for the hairs 28 and blends together variously colored hairs 28 of the hair wefts 80a-g.

The hair wefts 80k-l are disposed in a linear configuration generally centered transversely of a crown 118 of foundation 78. Hair wefts 80h-j are disposed in a rounded rectangular configuration generally centered about crown 118 of foundation 78, starting with hair weft 80j. Hair wefts 80h-i are progressively attached away from hair weft 80j radially outwardly from crown 118. Attachment areas 61 are affixed to the outer surface 79 of foundation 78 lying flat thereagainst at respective weft seams 116h-l, preferably expandable sewn zig-zag seams of nylon or similar thread which allow the foundation 78 to freely stretch and contract beneath the hair wefts 80h-l. Respective ends 54 and 56 of a majority of the hairs 28 of the hair wefts 80h-l typically point generally radially

outwardly from crown 118 to simulate the natural hair growth pattern at the crown 75 of the wearer's head 26. The ends 54 and 56 of the hairs 28 of adjacent hair wefts 80h-l overlie the attachment areas 61, folded middles 58, and the seams 60 and 116h-l of hair wefts 80h-l hiding them from view. This layered configuration provides a natural look for the hairs 28 and blends together variously colored hairs 28 of the hair wefts 80h-l.

Referring to FIGS. 14 and 15, therein is shown a third embodiment hairpiece or wig 120 in accordance with the present invention, being of partial size to cover a thinning hair portion 121 of a scalp 122. The wig 120 is shown as positioned on the thinning hair portion 121 of a normal fully hair covered portion 123 on the head 124 of a man 125 adjacent existing hair 126 covering a hair covered portion 127 thereof.

As best shown in FIG. 15, the wig 120 includes a stretchable foundation 130 to which a plurality of the hairs 28 are attached extending from a convex outer surface 131 thereof. The hairs 28 are in the form of a plurality of hair wefts 132a-k attached to the foundation 130 in an overlapping, spaced relationship. The wig 120 is of partial size such that the hairs 28 cover the thinning hair portion 121 of the scalp 122 and are arranged to blend in with the existing hair 126 on the hair covered portion 127 of the wearer's head 124.

Referring to FIGS. 13 and 15, the foundation 130 is made of the stretchable netting formed into a generally bowl-shaped configuration with the convex outer surface 131 as worn on the wearer's head 124. The foundation 130 is sized to closely fit over the thinning hair portion 121 retained on the wearer's head 124. The foundation 130 essentially comprises the circular blank 81 as formed and cut along a dotted line 133 ( FIG. 13) to form a modified circular blank 134. Therefore, the specifics of forming the modified circular blank 134 will not be further discussed.

A peripheral edge 135 of the modified circular blank 134 is stretchable and foldable like the remainder of blank 134. The modified circular blank 134 has an outer periphery 136 to which an elastic band 137 of the type described above is attached to further form and retain the generally bowl-shaped configuration for the foundation 130.

5           The elastic band 137 is formed into a looped configuration which extends completely around the outer periphery 136 of the modified circular blank 134 with opposite ends 138 and 139 thereof overlapping. The elastic band 137 is attached to the outer periphery 136 of the modified circular blank 134 at a plurality of individual places (not shown) or an expandable peripheral seam 140. The peripheral seam 140 shown comprises a stretchable sewn zig-zag seam which allows the modified  
10       circular blank 134 to freely stretch and contract. Triangular sections 141 are retained at respective section seams 142 comprising adjacent portions of the peripheral seam 140.

          The hair wefts 132a-k are of conventional design such as described above, being cut to length from raw lengths of the hair wefts 50 with the hairs 28 arranged on the foundation 130 to simulate natural hair growth patterns as follows.

15           As best shown in FIG. 15, the hair wefts 132a-j are disposed generally transversely of the foundation 130 starting with hair weft 132a at a front portion 143 of foundation 130, extending from a left side 144 to a right side 145 thereof. Hair wefts 132b-j are progressively attached away from hair weft 132a toward a rear portion 146 of the foundation 130. Attachment areas 61 are affixed to the outer surface 131 of foundation 130 lying flat thereagainst at respective weft seams 147a-j,  
20       preferably expandable sewn zig-zag seams of nylon or similar thread which allow the foundation 130 to freely stretch and contract beneath the hair wefts 132a-j. Respective ends 54 and 56 of a majority of the hairs 28 of the hair wefts 132a-j typically point generally in a forwardly direction, a

downwardly direction, an upwardly direction, or a combination thereof to simulate the natural hair growth pattern at a front portion 148 and the respective left and right side portions 149 and 150 of the wearer's head 124. The ends 54 and 56 of the hairs 28 of adjacent hair wefts 132a-j overlie the attachment areas 61, folded middles 58, and the seams 60 and 147a-j of hair wefts 132a-j hiding them from view. This layered configuration provides a natural look for the hairs 28 and blends together variously colored hairs 28 of the hair wefts 132a-j.

The hair weft 132k is disposed in a rounded rectangular configuration generally centered about a crown 151 of foundation 130. Attachment area 61 is affixed to the outer surface 131 of foundation 130 lying flat thereagainst at a weft seam 147k, preferably an expandable sewn zig-zag seam of nylon or similar thread which allows the foundation 130 to freely stretch and contract beneath the hair weft 132k. Respective ends 54 and 56 of a majority of the hairs 28 of the hair weft 130k typically point generally radially outwardly from crown 151 to simulate the natural hair growth pattern at a crown 152 of the wearer's head 124. The ends 54 and 56 of the hairs 28 of hair weft 132k overlies the attachment area 61, folded middle 58, and the seams 60 and 147k of hair weft 132j hiding them from view. This layered configuration provides a natural look for the hairs 28 and blends together variously colored hairs 28 of the hair wefts 132j-k.

Referring to FIGS. 1 and 16, therein is shown a fourth embodiment hairpiece or wig 153 in accordance with the present invention, for covering the hair 22 of the woman 24 on her head 26. The wig 153 comprises the wig 20 with a modified foundation 154 comprised of the foundation 27 with an elastic sheet 156, and the hair wefts 30a-l.

As best shown in FIG. 16, the wig 153 includes the stretchable foundation 154 to which a plurality of elongate hairs 28 are attached extending from a convex outer surface 157 thereof. The



hairs 28 may be natural hairs, artificial hairs, or a mixture thereof which are typically pre-dyed in one or more desired hair colors prior to attachment to the foundation 154. The hairs 28 are in the form of a plurality of the hair wefts 30a-1 attached to the foundation 154 in an overlapping, spaced relationship. The wig 154 shown is of full size such that the hairs 28 completely cover the normal fully hair covered portion 31 of the wearer's head 26.

The foundation 154 is made of the stretchable netting formed into a generally bowl-shaped configuration with the convex outer surface 157 as worn on the wearer's head 26. The foundation 154 is sized to closely fit over the hair 22 retained on the wearer's head 26. The foundation 154 essentially comprises the circular blank 32 having a modified peripheral edge 160 with a cutout 162 which extends into the peripheral edge 160 to form a modified circular blank 161. Therefore, the specifics of forming the modified circular blank 161 will not be further discussed. The peripheral edge 160 of the modified circular blank 161 is stretchable and foldable like the remainder of blank 161. The modified circular blank 161 has an outer periphery 164 to which an elastic band 166 of the type described above is attached to further form and retain the generally bowl-shaped configuration for the foundation 154.

The elastic band 166 is formed into a semi-looped configuration which extends nearly completely around the outer periphery 164 of the modified circular blank 161 with opposite ends 167 and 168 end at the cutout 162 and elastic sheet 156. The elastic band 166 is attached to the outer periphery 164 of the modified circular blank 161 at a plurality of individual places (not shown) or an expandable peripheral seam 169. The peripheral seam 169 shown comprises a stretchable sewn zig-zag seam which allows the modified circular blank 161 to freely stretch and contract. Triangular

sections 170 are retained at respective section seams 171 comprising adjacent portions of the peripheral seam 169.

The cutout 162 is filled in by the elastic sheet 156 made of a stretchable material such as natural or synthetic rubber, or similar stretchable materials which is sewn to the modified circular blank 161 along a seam 172. The seam 172 is preferably an expandable sewn zig-zag seam which allows the foundation 154 and elastic sheet 156 to freely stretch and contract beneath the hair weft 30a. The cutout 162 and the elastic sheet 156 are disposed at a front portion 174 of the foundation 154.

The hair wefts 30a-l are of conventional design such as described above, being cut to length from raw lengths of the hair wefts 50 with the hairs 28 arranged on the foundation 154 to simulate natural hair growth patterns as follows.

The hair wefts 30a-h are disposed generally transversely of the foundation 154 starting with hair weft 30a at the front portion 174 of foundation 154, extending from a left side 176 along the elastic sheet 156 to a right side 178 thereof. Hair wefts 30b-h are progressively attached away from hair weft 30a toward a rear portion 180 of the foundation 154. Attachment areas 61 are affixed to the outer surface 157 and the elastic sheet 156 of foundation 154 lying flat thereagainst at respective weft seams 184a-h, preferably expandable sewn zig-zag seams of nylon or similar thread which allow the foundation 154 to freely stretch and contract beneath the hair wefts 30a-h. Respective ends 54 and 56 of a majority of the hairs 28 of the hair wefts 30a-h typically point generally in a forwardly direction, a downwardly direction, an upwardly direction, or a combination thereof to simulate the natural hair growth pattern at the front portion 71 and the respective left and right side portions 72 and 73 of the wearer's head 26. The ends 54 and 56 of the hairs 28 of adjacent hair wefts 30a-h

overlie the attachment areas 61, folded middles 58, and the seams 60 and 184a-h of hair wefts 30a-h hiding them from view. This layered configuration provides a natural look for the hairs 28 and blends together variously colored hairs 28 of the hair wefts 30a-h.

The hair wefts 30i-l are disposed in a rounded triangular configuration generally centered about a crown 183 of foundation 154, starting with hair weft 30l. Hair wefts 30i-k are progressively attached away from hair weft 30l radially outwardly from crown 183. Attachment areas 61 are affixed to the outer surface 157 of foundation 154 lying flat thereagainst at respective weft seams 184i-l, preferably expandable sewn zig-zag seams of nylon or similar thread which allow the foundation 154 to freely stretch and contract beneath the hair wefts 30i-l. Respective ends 54 and 56 of a majority of the hairs 28 of the hair wefts 30i-l typically point generally radially outwardly from crown 183 to simulate the natural hair growth pattern at the crown 75 of the wearer's head 26. The ends 54 and 56 of the hairs 28 of adjacent hair wefts 30i-l overlie the attachment areas 61, folded middles 58, and the seams 60 and 184i-l of hair wefts 30i-l hiding them from view. This layered configuration provides a natural look for the hairs 28 and blends together variously colored hairs 28 of the hair wefts 30i-l. The elastic sheet 256 allows the wig 152 to provide a more natural hairline 186 at the front portion 71 of the wearer's head 26.

The wigs of the present invention are significantly lighter than existing wigs, provide a more natural appearance, use less materials and are therefore less expensive to fabricate, and have an open construction which permits greater air circulation/breathing for the wearer's scalp providing a cooler and more comfortable wig to wear. The wigs are also easier to secure to the wearer's head and provide a far more natural overall appearance, even when the user's hair has not been styled. The wigs are easily restylable or refurbishable by replacing some or all of the hair wefts with

replacements of a desired texture, color, length, highlights, and the like. The wigs are smooth and gentle on the wearer's existing hair and scalp, and comfortable to wear and may be worn in any weather conditions.

Many variations to the wigs of the present invention are possible while staying within the same inventive concept. For example, the configuration of the hair wefts disposed centered about the crown of the foundation may be many shapes such as circular, polygonal, and the like. The foundation may be of any desired color including a flesh color matching that of the wearer. The fibers of the stretchable netting may produce openings of shapes other than rectangular or square, such as triangular or pentagonal such as by using additional fiber groups at various angles to the other fiber groups. Single or double hair wefts may be used alone or in combination covering various areas of the foundation and the wearer's head. The seams may be of other sewn or non-sewn types including use of adhesives or heat sealing. The hairs may be curled, straightened, or have any of the other treatments normally done to hair including applying hair spray, mousse, and conditioner. The wig, particularly using "weaved" hair wefts provides the look of individual hairs extending from the wearer's head without the tedious tying of individual hairs to the foundation. The hair wefts may be attached to the foundation tangent to the outer surface thereof as shown, or at any angle off tangent such that the hairs initially extend outwardly therefrom at such angle.

Whereas this invention is here illustrated and described with reference to embodiments thereof presently contemplated as the best mode of carrying out such invention in actual practice, it is to be understood that various changes may be made in adapting the invention to different embodiments without departing from the broader inventive concepts disclosed herein and comprehended by the claims that follow.